

**ABSTRACT**

The invention concerns an all-optical converter (10) for converting an intensity-modulated optical signal into an optical signal modulated to the DPSK format, characterised in that it comprises:

- a first input (152a) for a first intensity-modulated optical signal (12);
- a differential encoding module (100) adapted to perform a differential encoding between the first signal (12) and a second optical signal synchronous with the first signal (12);
- a device adapted to modulate (200) adapted to modulate the phase of an optical signal (16) according to the differential encoding performed by the differential encoding module (100);
- an output (162c) of the device adapted to modulate (200) delivering an optical signal modulated to the DPSK format (14).

**BEST AVAILABLE COPY**